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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/668,844	09/22/2000	Jacek Stachurski	TI-29492	2444

23494 7590 04/26/2004

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EXAMINER	
LERNER, MARTIN	
ART UNIT	**PAPER NUMBER**
2654	

DATE MAILED: 04/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/668,844	Applicant(s) STACHURSKI ET AL.	
	Examiner Martin Lerner	Art Unit 2654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 to 4* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 to 4* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 September 2000* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Applicants' Specification, Page 1, notes a claim for priority from provisional applications, Serial Numbers 60/155,517, 60/155,439, and 60/155,438, all filed 22 September 1999. However, Applicants' Declaration only claims priority with respect to one of these, Serial No. 60/155,439. Applicants may wish to request a corrected filing receipt to ensure any issued patent indicates a priority claim for all three provisional applications.

Drawings

2. The drawings are objected to because of the following defects:

Figure 3a should be labeled Figure 3. Page 4 of the Specification, Brief Description of the Drawings, refers to Figure 3, not Figure 3a.

The Specification does not appear to describe either Figure 3 or Figure 3a. There does not seem to be any reference to Figure 3 in the Description of the Preferred Embodiments.

Applicants' hand corrected changes to the numbering of the figures make it more difficult to understand the invention with respect to the Description of the Preferred Embodiments. Formal drawings should be submitted to clarify the numbering of the drawings.

The drawings are generally informal due to the presence of hand numbering and hand lettering.

A proposed drawing correction or corrected drawings are required in reply to the Office Action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities:

On page 4, line 8, "feature" should be –features—.

On page 6, last line, "Quantization 112" should be –Quantization 110—. See Figure 1.

On page 7, line 23, the sentence "provides . . ." is incomplete.

On page 12, line 2, the reference to Figures 3b and 3c is incorrect. There are no Figures 3b and 3c.

On page 13, line 12, shouldn't "six 20-sample subframes" be –eight 20-sample subframes—? If there are 160 samples, then there would have to be eight 20-sample subframes. (8 x 20 = 160)

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 3, and 4 are rejected under 35 U.S.C. 102(e) as being anticipated by *Aguilar et al. ('082)*.

Regarding independent claims 1 and 4, *Aguilar et al. ('082)* discloses a hybrid speech encoder, comprising:

"a linear prediction, pitch, and voicing analyzer" – pitch estimation block 110, voicing estimation block 115, LSF to baseband LPC Conversion Block 325 (Figures 1A and 1B); RCELP encoder receives a pitch estimate from harmonic encoder and determines baseband LPC prediction coefficients (column 5, lines 40 to 62; column 7, lines 28 to 42: Figures 4A and 4B);

"a parametric encoder coupled to said analyzer" – harmonic encoder block (Figures 1A and 1B); the hybrid encoder splits the input signal into 2 signal paths; a first path is fed to the harmonic encoder (column 3, lines 10 to 26); a second means for encoding is a parametric encoder, e.g. a harmonic encoder (column 35, lines 15 to 22);

"a waveform encoder coupled to said analyzer" – CELP encoder block (Figure 1A and 1B); the hybrid encoder splits the input signal into 2 signal paths; a second signal is fed to the RCELP encoder (column 3, lines 10 to 26); a first means for encoding is a waveform encoder, e.g. a relaxed CELP encoder (column 35, lines 7 to 14);

"wherein said parametric encoder encodes an alignment phase" – GABS control module 422 determines whether a relative time shift should be performed on the current frame (column 10, line 63 to column 11, line 4: Figure 4.2); alignment processor 425 attempts to align the LPC prediction residual with the LPC target vector (column 13, lines 41 to 65: Figure 4.2); the alignment algorithm is set forth in detail (column 15, line 15 to column 18, line 40); an encoding means maintains waveform phase alignment between the encoded output signal from the first means for encoding with the encoded output signal from the second means for encoding (column 34, lines 58 to 62).

Regarding independent claim 3, *Aguilar et al. ('082)* discloses a hybrid speech decoder, comprising:

"a linear prediction synthesizer" – short-term synthesis filter and postfilter 330 receives LPC predictor coefficient array A in RCELP decoder (column 3, lines 43 to 57: Figure 3);

"a parametric decoder coupled to said synthesizer" – hybrid decoder includes a harmonic decoder (column 3, lines 28 to 42; column 38, lines 26 to 32: Figures 2A and 2B); a harmonic decoder is a parametric decoder (column 2, lines 20 to 27);

"wherein said parametric decoder decodes an alignment phase" – hybrid decoder comprises a phase synchronize hybrid waveform block 240 and a phase calculate block 245 (column 3, lines 27 to 42: Figures 2A and 2B); phase synchronize hybrid waveform block 240 imports system phase offset BETA of the baseband signal, used to generate the phase response for the voiced harmonics in the harmonic decoder (column 4, lines

3 to 11; column 29, line 46 to column 30, line 38: Figures 2A and 2B, and 6); a decoder combines reconstructed first and second signals by maintaining waveform phase alignment (column 35, lines 47 to 67).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Aguilar et al. ('082)* in view of *Thomson*.

Aguilar et al. ('082) does not expressly disclose encoding phase alignment as a difference of an intermediate phase and a phase alignment to codebook waveform phase. However, *Thomson* teaches a related harmonic speech encoding method, where one method of estimating phase involves calculating a phase residual error ε_k. The phase residual may be coded by replacing ε_k with a random vector $\Psi_{c,k}$ selected from a codebook of C codewords. (Column 5, Lines 28 to 39; Column 6, Lines 13 to 29) A parametric phase estimator 235 obtains an estimated phase spectrum $\theta_0(\omega)$, by calculating the phase residual as the difference between the true phase $\theta(\omega_k)$ and the estimated phase $\theta(\omega_k)$. Vector quantization then replaces the phase residual with a random vector $\Psi_{c,k}$ selected from a codebook 243. (Column 10, Lines 24 to 49) Here, the phase residual error ε_k represents "the difference" between the estimated phase

spectrum $\theta(\omega_k)$ ("an intermediate phase") and the quantized codebook phase, where the phase residual error ε_k is quantized by a codebook vector ("a phase alignment to codebook waveform phase"). *Thomson* suggests the method of phase alignment is advantageous in harmonic speech encoders to transmit encoded speech at a low bit rate by predicting the phase from previous frames, as the phase remains relatively constant from frame to frame. (Column 3, Lines 40 to 52) It would have been obvious to one having ordinary skill in the art to apply the phase residual error and quantization method of *Thomson* to the phase alignment method of *Aguilar et al. ('082)* for the purpose of encoding speech at a lower bit rate by predicting the phase from previous frames.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to Applicants' disclosure.

Aguilar ('387), Castello da Costa et al., Wang et al., Zhong, and Stachurski et al. disclose related art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin Lerner whose telephone number is (703) 308-9064. The examiner can normally be reached on 8:30 AM to 6:00 PM Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (703) 305-9645. The fax phone

number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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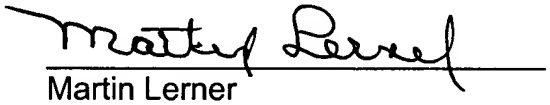

Martin Lerner
Examiner
Group Art Unit 2654